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EVALUATION OF LIGHTWEIGHT, RELOCATABLE STRUCTURES FOR USE IN TH--ETC(U)
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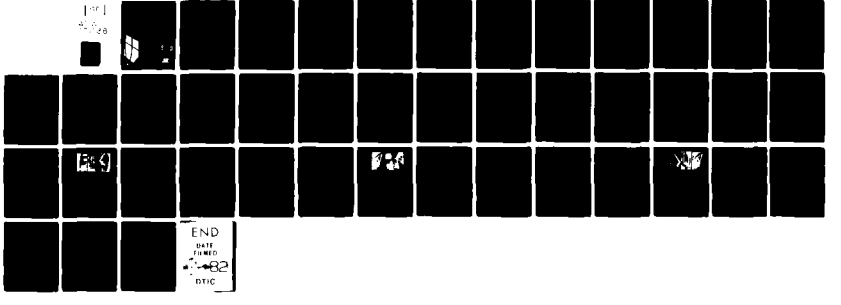

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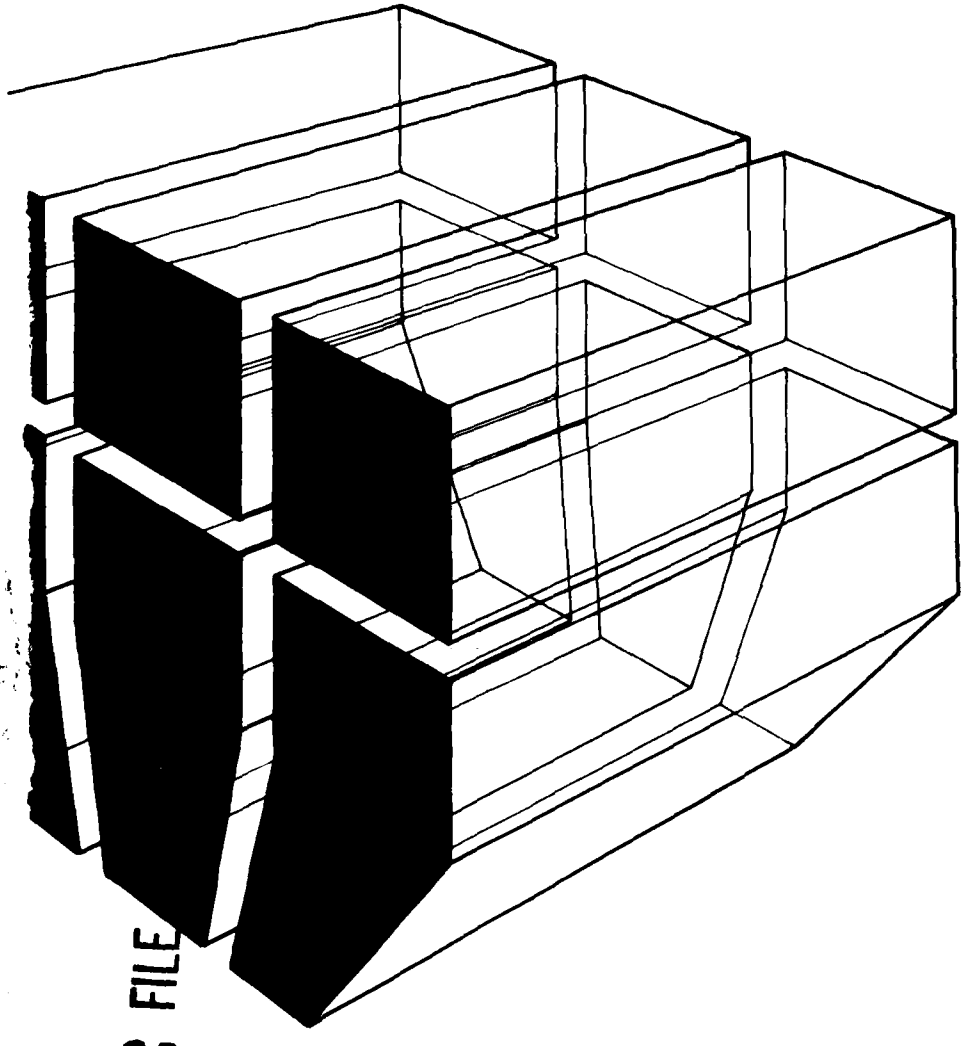
Technical Report M-314
May 1982
AFCS Lightweight T/O Structures

EVALUATION OF LIGHTWEIGHT, RELOCATABLE STRUCTURES FOR USE IN THEATERS OF OPERATIONS



by
A. Kao
M. Frisch
J. Lambert
M. Ptak

CERL

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The U.S. Army Construction Engineering Research Laboratory (CERL) identified and evaluated lightweight structures that are now being used by the military services and private industry, and that meet Army Facilities Component System (AFCS) requirements for initial to intermediate standards of construction (buildings to be used from 0 to 24 months).

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To gather information about structures meeting these requirements, CERL surveyed Department of Defense agencies and private manufacturers. To evaluate and rank the shelters, CERL then used the Theater of Operations Building System Evaluation Procedure (TOBSEP) computer program.

This study found that off-the-shelf relocatable buildings available commercially can meet AFCS requirements, although the size correspondences may not be exact. The current DOD inventory of lightweight, relocatable structures does not meet the needs of AFCS--except for tentages and the Marine Corps Knockdown building system. Prefabricated panel and pre-engineered building systems can be used for structures with an 8-ft (2.4-m) ceiling and a width less than 60 ft (18.29 m). Requirements for larger facilities can be met by fabric structures. Most interior facilities provided by commercial manufacturers are expensive and exceed the requirements for military facilities. Most commercial systems do not lend themselves to phased construction. Most commercial structures do not adapt effectively to various climates (temperate, desert, tropic, frigid) without the use of mechanical systems.

FOREWORD

This study was performed by the Engineering and Materials Division (EM), U.S. Army Construction Engineering Research Laboratory (CERL) for the Office of the Chief of Engineers (OCE) under Project 4A762731AT41, "Military Facilities Engineering Technology"; Task Area G, "Base Development in the Theater of Operations"; Work Unit 008, "AFCS Lightweight T/O Structures." The OCE Technical Monitor was Mr. Arnold Ivener, DAEN-MPC-I. Dr. R. Quattrone is Chief of EM.

COL Louis J. Circeo is Commander and Director of CERL, and Dr. L. R. Shaffer is Technical Director.

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1 INTRODUCTION

Background

The Army Facilities Component System (AFCS) now provides facilities meeting three construction standards: initial (to be used from 0 to 6 months), intermediate (6 to 24 months), and temporary (24 to 60 months). Based on the latest doctrine in the Joint Chiefs of Staff (JCS) Publication 3, the "24 to 60 months" standard has been eliminated and intermediate redesignated as temporary.[1] Most facilities in the present AFCS system have been developed to satisfy the intermediate and temporary requirements–the assumption being that assets already in the Table of Organization and Equipment (TOE) would meet most initial requirements. As a result, AFCS does not include many facilities that meet the initial construction requirements. However, with the Army's increased emphasis on short, intense conflicts, AFCS needs to develop facilities that will satisfy this standard.

Objective

The objective of this study was to identify and evaluate lightweight structures that are now used by the military services and private industry, and that meet AFCS requirements for initial to intermediate standards (0 to 24 months) of construction.

Approach

This objective was achieved by performing the study in two phases:

1. The U.S. Army Construction Engineering Research Laboratory (CERL) collected information about structures that Department of Defense (DOD) agencies and private industry developed, and that met AFCS requirements for theater of operations (TO) use.

2. These structures were evaluated and ranked based on a set of criteria developed from the principles of construction in Technical Manual (TM) 5-333 and from other functional requirements.[2] The derivation of the evaluation criteria is explained in Chapter 2.

Mode of Technology Transfer

It is anticipated that the building systems identified will be incorporated by AFCS into Army TM 5-301, 5-302, and 5-303.[3]

2 METHODOLOGY

Evaluation Criteria

TM 5-333 discusses three principles for construction in TOs: speed of construction through the standardization and simplification of building components and construction activities; economy of construction in the use of materials, equipment, and personnel; and flexibility in meeting changing TO conditions.

Several criteria were drawn from these principles of construction to guide the evaluation. The building systems were to:

1. Minimize weight logistical requirements

2. Minimize volume logistical requirements

3. Be container compatible

4. Minimize construction costs for material and labor

5. Minimize construction skills and maximize simplicity of erection components

6. Minimize time needed to erect building components

7. Minimize requirements for equipment and for operator skills.

[1] Joint Chief of Staff Publication 3, Vol 1 (Confidential), *Joint Logistics and Personnel Policy and Guidance;* Vol 2, *Joint Personnel/Manpower Policy and Guidance* (August 1973).

[2] *Construction Management,* Technical Manual (TM) 5-333 (Headquarters [HQ], Department of the Army [DA], February 1972).

[3] *Army Facilities Component System–Planning,* TM 5-301 (HQ, DA, September 1973); *Army Facilities Component System–Design,* TM 5-302 (HQ, DA, September 1973); *Army Facilities Component System–Logistics Data and Bills of Materials,* TM 5-303 (HQ, DA, June 1981).

In addition, the technical objectives suggested further criteria related to functional requirements. The building systems were to:

8. Be easily relocatable

9. Have adequate shelf life

10. Be easily adaptable to different climatic conditions

11. Require short lead-time for procurement

12. Be fabricated with readily available materials

13. Be compatible with existing AFCS interior design.

Based on these 13 points, evaluation criteria, with weighting factors suggested by AFCS, were developed (Table 1). The factors indicated the relative importance of each criterion in computing the final evaluation number. This final score was the primary element determining whether a structure would be recommended.

Evaluation Procedure

The evaluation study was divided into two major tasks. The first was to establish a list of manufacturers producing prefabricated buildings, and to contact these companies to obtain information necessary for evaluation. The second task was to establish a procedure for evaluating the structures.

Table 1
Candidate Structural System Selection Factors

Factors	Weighting Factor, Percent
1. Weight (short tons)	10
2. Cubage (measurement ton)	10
3. Container compatible	10
4. Cost	10
5. Erection simplicity	8
6. Assembly time (hours and manhours)	12
7. Special assembly equipment requirements	6
8. Relocatability	8
9. Shelf life (minimum 5 years)	5
10. Climate adaptability (temperate, desert, tropic, frigid)	5
11. Lead-time (procurement)	5
12. Quantity flexibility (materials availability, forming materials, or equipment)	5
13. Compatibility with existing AFCS interior designs	6
	100

Task 1

From information in previous CERL studies, CERL's files, and Sweet's catalog, a list of commercial manufacturers was compiled (Appendix A).[4] CERL sent letters to 124 manufacturers to find out whether the performance of their structures met the evaluation criteria. Thirty-six companies responded. These manufacturers were later telephoned for more information needed to complete the evaluation.

In addition to the structures produced by commercial manufacturers, three DOD structures were evaluated: the Marine Corps' Knockdown Shelter, the Army's Temper Tent, and other structures listed in the Joint Services Catalog.[5]

Task 2

To assess several different shelters, a basis of comparison had to be established. Each shelter was evaluated in its bare state—i.e., without furniture and mechanical systems. It was felt that once a shelter had been isolated, interior packages of furnishings or mechanical equipment could be supplied either by AFCS or, in many cases, by the manufacturers.

To evaluate the large number of structural sizes which manufacturers offered, CERL selected a basic module for each width increment provided by AFCS (TM 5-302). Changes in length increments were treated as variations on the basic modules and therefore were not evaluated separately.

The Theater of Operations Building System Evaluation Procedures (TOBSEP) were used to evaluate each structure.[6] These procedures were modified to reflect the criteria and weighting factors given in Table 1. TOBSEP criteria identical to those in Table 1 were retained; criteria in TOBSEP but not in Table 1 were eliminated. Criteria in Table 1 but not in TOBSEP were added.

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[4]Thomas A. Kenny, T. Csizmadia, R. Schneider, *Effective Use of Systems Building Technology: Open Systems Catalog, Vols I-III*, Special Report D-73/ADA040756, ADA040757, ADA040758 (U.S. Army Construction Engineering Research Laboratory [CERL], June 1977); *Industrial Construction and Renovation Catalog File* (Sweet's Division, McGraw-Hill Information Systems Company).

[5]*Joint Services Catalog of Pre-Engineered Facilities Which Are Retrievable and Relocatable*, Department of the Army Pamphlet 415-2 (Departments of the Army, the Navy, and the Air Force, February 1977).

[6]T. C. Ryan and L. C. Tietz, *Evaluation System for Proposed Theater of Operation Structures*, Technical Report C-14/ADA006014 (CERL, January 1975).

The TOBSEP computer program allowed CERL to evaluate many structures and to store the results in retrievable files which could be changed and expanded as additional data were gathered through interviews with manufacturers' technical and sales personnel.

3 EVALUATION RESULTS

The results of the evaluation for three typical building sizes in AFCS are presented in Appendix B: a 30-ft (9.14-m) by 60-ft (18.29-m) by 8-ft (2.44-m)-high barracks, a 40-ft (12.19-m) by 100-ft (30.48-m) by 14-ft (4.27-m)-high warehouse, and an 80-ft (24.38-m) by 100-ft (30.48-m) by 12-ft (3.66-m)-high signal maintenance building. The evaluation results for each building include an illustration of the existing AFCS structure, an evaluation summary, and a structure evaluation (Figures B1 through B15).

The illustration of the existing structure shows the plan of the building from TM 5-302. The evaluation summary includes: (1) the ranking of all structures meeting dimensional requirements; this ranking is by final evaluation number from the TOBSEP calculation described below; (2) the structures recommended; and (3) an illustration of top candidates.

The structure evaluation—the TOBSEP evaluation for a candidate structure—includes the group criteria; the weighting factor for each group; a raw score, which is a numeric value assigned the structure based on an analysis of the manufacturer's questionnaire responses; and a group evaluation number, which is the product of the weighting factor multiplied by the raw score. The final evaluation number is the total of the 13 group evaluation numbers.

Other building sizes in AFCS were also evaluated. Top candidates selected for each AFCS facility are listed in Table 2. The evaluation indicated that the current DOD inventory of tactical lightweight, relocatable structures does not meet the needs of AFCS since AFCS buildings, in general, are nontactical and vary widely in size. With the exception of items from tentage and the Marine Corps Knockdown building system, tactical shelters generally have a small amount of space and are limited in application.

Private industry has shown an interest in relocatable, lightweight building systems and offers several structural alternatives. Two systems appear to meet best the various needs of AFCS. Structural needs at the lower end of the inventory (facilities with an 8-ft [2.4-m] ceiling height and moderate width—less than 60 ft [18.29 m]) are met by prefabricated panel and pre-engineered building systems. Each is container compatible, relatively light for transport, and relocatable. See Table 3 for a ranking of the top 10 manufacturers. Fabric structures can be used most efficiently for larger facilities (with ceiling heights over 8 ft [2.4 m] and clear widths greater than or equal to 60 ft [18.29 m]). These have relatively light shipping weights, and are container compatible and relocatable. See Table 4 for a ranking of the top manufacturers.

The following deficiencies were identified for off-the-shelf, commercially available building systems:

1. Most interior items of equipment, such as furniture, provided by commercial manufacturers are expensive and exceed the requirements for military facilities. More austere facilities are needed.

2. Most commercial systems cannot be used for phased construction. Since building components are totally prefabricated in factories, the field commander cannot determine the level of austerity that may be needed for different requirements.

3. Most manufacturers say that their building systems are adaptable to varying climates (desert, tropical, temperate, and frigid), but these claims are based on the assumption that mechanical cooling and heating systems will be used to maintain the desired interior temperatures. In fact, the systems cannot be adapted readily to varying climates.

4 CONCLUSIONS

1. Off-the-shelf relocatable buildings available commercially can meet AFCS requirements, although the size correspondences may not be exact (Appendix B).

2. The current DOD inventory of lightweight, relocatable structures does not meet the needs of AFCS—except for tentages and the Marine Corps Knockdown building system.

3. Prefabricated panel and pre-engineered building systems can be used for structures with an 8-ft (2.4-m) ceiling and a width less than 60 ft (18.29 m). Requirements for larger facilities can be met by fabric structures.

Table 2
Candidate Structures for AFCS

Dimension, W x L x H	Facility Description	AFCS Facility Number	Kelly Klosure	Marine Corps Knockdown	D.S.I.	Parkline	Atco	Expandable Tent Shelters	Mobile Structures	C/O/A	Anchor Industries	Span Systems	Morgan	K-Span	Dobler	Endure-A-Lifetime	Brunswick	Olympic	National	Birdair	Seaman	Goodyear	Pascoe	Lockheed
10 20 8	Latrine	72321BG						•									•					•		
20 20 8	Bathhouse	723524	•					•									•							
	Barracks	340325	•					•									•							
	Warehouse	44110BE	•					•									•							
20 24 8	Ice plant	43-21	•	•	•																			
20 30 8	Administration	61-11	•			•		•																
	Bathhouse	72-32	•			•		•																
	Chapel	74-47	•			•		•																
	Exchange	74-17	•			•		•																
	Educ bldg	74-13	•			•		•																
	Warehouse	44-11	•			•		•																
20 39 8	Ice plant	43-22	•	•	•																			
20 40 8	Administration	61-11		•					•		•													
	Bathhouse	72-32		•					•		•													
20	Communication bldg	13-12	•			•										•								
20 48 8	Barracks, arch	35-22	•	•					•															
	Barracks, arch	34-22	•	•					•															
20 50 8	Bathhouse	72-32	•	•					•															
	Bathhouse	72-35	•	•					•															
	Educ bldg	74-13	•	•					•															
	Exchange	74-17	•	•					•															
	Administration	61-11	•	•					•															
	Chapel	74-47	•	•					•															
	Warehouse	44-11	•	•					•															

Table 2 (cont'd)

Dimension, W x L x H	Facility Description	AFCS Facility Number	Kelly Klosure	Marine Corps Knockdown	D.S.I.	Parkline	Atco	Expandable Tent Shelters	Mobile Structures	C/O/A	Anchor Industries	Span Systems	Morgan	K-Span	Dobler	Endure-A-Lifetime	Brunswick	Olympic	National	Birdair	Seaman	Goodyear	Pascoe	Lockheed
20 60 8	Bathhouse	72-32	•	•	•																			
	Exchange	74-13	•	•	•																			
20 80 0	Exchange	741723	•	•			•																	
	Bathhouse	72-32	•	•			•																	
20 100 8	Exchange	74-13	•	•	•																			
	Bathhouse	72-35	•	•	•																			
	Administration	61-11	•	•	•																			
	Barracks	72-21	•	•	•																			
	Warehouse	44-11	•	•	•																			
30 60 8	Barracks	51-71	•			•					•													
	Chapel	74-47	•			•					•													
30 70 8	Dispensary	51-21	•			•													•					
	Administration	61-11	•			•													•					
30 80 8	Dispensary	53-01	•	•		•																		
30 90 8	Dispensary	53-01	•			•					•													
30 100 8	Barracks	51-71	•	•		•																		
	Barracks	53-05	•	•		•																		
32 32 8	Warehouse	34-11			•	•					•													
40 40 12	Motor repair	21-41	•				•																	•
20	Shop	34-19	•				•														•			
20	Communication/tel	13-12/13-14	•				•														•			
16	Training fac	17120AA	•				•																	
40 50 8	Post office	61-22	•									•												•

Table 2 (cont'd)

Dimension, W × L × H	Facility Description	AFCS Facility Number	Kelly Klosure	Marine Corps Knockdown	D.S.I.	Parkline	Atco	Expandable Tent Shelters	Mobile Structures	C/O/A	Anchor Industries	Span Systems	Morgan	K-Span	Dobler	Endure-A-Lifetime	Brunswick	Olympic	National	Birdair	Seaman	Goodyear	Pascoe	Lockheed
40 60 12	Motor repair	21-41	•												•									•
20	Radio recv'r	13-21	•				•																	•
8	Day room	74-13	•	•	•																			
8	Post office	61-22	•	•	•																			
20	Telephone	13-14	•				•						•											
17	Ice plant	43-23	•				•																	•
14	Film equip & exch	75-15	•							•								•						
40 70 8	Post office	61-22		•	•																			•
40 80 0	Library	74-41	•	•	•																			
8	Chapel	74-47	•	•	•																			
12	Communication, R/S	13-11	•																					•
40 90 8	Post office	61-22	•	•			•																	
40 100 8	Warehouse	44-11	•		•					•														
14	Warehouse	44-11	•				•																	•
8	Administration	61-11	•	•	•																			
8	Post office	61-22	•	•	•																			
8	Theatre	74-45	•	•	•																			
11	Theatre	74-45	•				•					•												
8	Library	74-41	•	•	•																			
8	Crafts	74-36	•	•	•																			
15	Marine shop	15-32	•				•																	•
8	Central material	51-46	•	•	•																			
14	Carpenter shop	34-01	•				•																	•
12	Signal maint	13-23	•				•																	•
14	Laboratory, motion picture	75-14	•				•																	•
14	Film equip & exch	75-15	•				•																	•
40 110 8	Finance off	61027	•	•																				•

Table 2 (cont'd)

Dimension, W × L × H	Facility Description	AFCS Facility Number	Kelly Klosure	Marine Corps Knockdown	D.S.I.	Parkline	Atco	Expandable Tent Shelters	Mobile Structures	C/O/A	Anchor Industries	Span Systems	Morgan	K-Span	Dobler	Endure-A-Lifetime	Brunswick	Olympic	National	Birdair	Seaman	Goodyear	Pascoe	Lockheed
40 120 14	Carpenter shop	34-01	•				•																	•
20	Communication, radio	13-19	•				•						•											
40 140 12	Communication, R/S	13-11	•				•																	•
42 100 8	Kitchen & mess hall–200 man	72-61	•							•			•											
42 140 14	Kitchen & mess hall–500 man	72-62	•										•					•						
48 80 12	Boiler plant	82-21	•	•						•														
8	Kitchen & mess hall–200 man	72-61	•	•						•														
48 120 12	Boiler plant	82-21	•							•				•										
48 128 14	Kitchen & mess hall–500 man	72-62	•							•				•										
60 60 15/20	Shop	34-19											•							•	•			
60 80 20	Shop	34-19											•							•	•			
69 89 18	Maint shop (VEH)	21410AA											•							•	•			
97	Repair shop (VEH)	21410AD											•							•	•			
120	Maint shop (VEH)	21410AG-BR											•							•			•	
140 20	Theatre	74-46											•							•	•			
145 18	Repair shop (VEH)	21410AT											•							•	•			
153 18	Maint shop (VEH)	21410AY											•							•	•			
160 12	Boiler plant	82-21	•										•								•			
160 14	Special activities bldg	74-31											•							•	•			
180 20	Marine shop	15-32											•							•	•			
185 18	Maint shop (VEH)	21410BB-BE											•							•	•			

Table 2 (cont'd)

Dimension, W x L x H	Facility Description	AFCS Facility Number	Kelly Klosure	Marine Corps Knockdown	D.S.I.	Parkline	Atco	Expandable Tent Shelters	Mobile Structures	C/O/A	Anchor Industries	Span Systems	Morgan	K-Span	Dobler	Endure-A-Lifetime	Brunswick	Olympic	National	Birdair	Seaman	Goodyear	Pascoe	Lockheed
193 18	Repair shop (VEH)	21410BL											•							•	•			
258 18	Maint shop (VEH)	21410BH											•							•	•			
260 14	Special activities bldg	74-32											•							•	•			
300 15/20	RR Repair	86-31					•						•							•				
80 100 12	Signal maint	13-23											•							•				•
15/20	Shop	34-19											•							•				•
14	Library	74-43											•							•				•
80 120 14	Exchange	74-23											•							•		•		
14	Crafts	74-37											•							•		•		
140 14	Post office	61-22											•							•				•
180 15/20	Auto rebuild	21-43											•							•				•
180 20	Ordnance shop	21-43											•							•				•
200 14	Post office	61-22											•							•				•
220 14	Warehouse	44-110											•							•				•
240 14	Post office	61-22											•							•				•
240 12	Auto maint	21-41											•							•				•
240 20	Ordnance fld	21-42											•							•				•
300 15/20	RR Machine	86-31											•							•				•
100 200 14	Film equip & exch	75-15											•							•				•
120 160 15/20	Ordnance PK	21-81																		•	•			•
240 15/20	Gen purpose	21-82																		•	•			•
180 320 14/20/35	Ordnance	21-51																			•			•

Table 3
Ranking of Structures Less Than 60-Ft (18.29-m) Wide

Rank*	Manufacturer	1st	2nd	3rd	Total Points
1	Kelly Klosure	29	27	16	157
2	Marine Corps Knockdown	14	21	23	87
3	Lockheed-Georgia	15	1	0	47
4	D. S. I.	2	1	12	36
5	Parkline Inc.	9	0	7	34
6	Atco Foldaway	0	6	15	27
7	Expandable Tent Shelters	4	6	0	24
8	Mobile Structures	2	2	7	17
9	C/O/A	0	4	3	11
10	Anchor Industries	0	1	5	7

*Ranking of manufacturers by the number of times they received a first, second, or third place evaluation of AFCS facilities less than 60-ft (18.29-m) wide. Ranking procedure: first place evaluation = 3 points, second place evaluation = 2 points, and third place evaluation = 1 point.

Table 4
Ranking of Structures Equal to or Greater Than 60-Ft (18.29-m) Wide

Rank*	Manufacturer	1st	2nd	3rd	Total Points
1	Birdair Chemfab	32	0	0	96
2	Morgan	1	26	4	59
3	Lockheed-Georgia	3	2	25	32
4	Seaman	0	4	13	21
5	Goodyear Aerospace	0	2	0	4
6	U.S. Army Tent M-1950	1	0	0	3
7	Pascoe	0	1	0	2
8	Kelly Klosure	0	0	1	1
9	Atco	0	0	1	1

*Ranking of manufacturers by the number of times they received a first, second, or third place evaluation for AFCS facilities greater than or equal to 60-ft (18.29-m) wide. Ranking procedure: first place evaluation = 3 points, second place evaluation = 2 points, and third place evaluation = 1 point.

4. Most interior facilities provided by the commercial manufacturers are expensive and exceed the requirements for military facilities.

5. Most commercial systems do not lend themselves to phased construction.

6. Most commercial structures do not adapt effectively to various climates (temperate, desert, tropical, frigid) without the use of mechanical systems.

7. A lightweight prefabricated panel system for buildings less than 60-ft (18.29-m) wide should be developed to meet the following requirements:

a. Sizes should correspond to the new AFCS panelized wood building system incorporated into AFCS in 1981 (Change 3 to TM 5-301, 5-302, and 5-303).

b. Interior facilities should be interchangeable with the new AFCS panelized wood building system.

c. Capabilities for phased construction should be provided.

d. Options for various climatic conditions should be provided.

APPENDIX A:
LIST OF COMMERCIAL MANUFACTURERS CONTACTED

The 124 manufacturers listed below were surveyed from 1 October 1980 to 1 April 1981.

Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Adams and Westlocke Company Ford Street Elkhart, IN 46514		
Air Inflatable Products Company 240 Dodge Avenue East Haven, CT 06512	Returned	
Air Logistics Corporation 3600 East Foothill Blvd. Pasadena, CA 91109		
Aluminum Company of America 1043 Alcoa Bldg. Pittsburgh, PA 15219	Returned	
Aluminum Construction Company 1017 Alcoa Bldg. Pittsburgh, PA 15219	Returned	
Aluminum Structures Company 2514 Laurel Lane Wilmette, IL 60091		
Anchor Industries 1100 Burch Dr. Evansville, IN 47733		*
Armbruster Manufacturing Company 8601 Old Route 66 South Springfield, IL 62707		
Armco Steel Corporation Box 600 Middletown, OH 45043		
Arthur Industries P.O. Box 74, South Main St. Terryville, CT 06786		*
Atlantic International Corporation 111 T Chesapeake Park Plaza Baltimore, MD 21220		

Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Atco Corp. 1830 N. Lamon Chicago, IL 60639		
ATCO Industries 3600 Yosemite, Suite 205 Denver, CO 80237		*
Aurora Building Complexes P.O. Box 4246 Riverside, CA 92504		
Automated Structures, Incorporated Box 5346 Charlottesville, VA 22903		
Basic Dwellings, Inc. P.O. Box 82 Claremont, CA 91711		*
Behlen Manufacturing Company P.O. Box 569 Columbus, NB 68601		
Bellaire Products, Incorporated N. Highway 301 Tallevast, FL 33580		
Birdair/CHEMFAB 2015 Walden Ave. Buffalo, NY 14225		*
Bradley Washfountain Company 9101 Fountain Blvd. Menomence Falls, WI 53051		
Brunswick Corp. Defense Division 150 Johnston Road Marion, VA 24354		*
Butler Manufacturing Company BMA Tower Kansas City, MO 64141	Returned	
CAREW Corporation 3495 Industrial Hwy. York, PA 17402		
Cary-Way Building Company 7150 Almeda-Genoa Rd. Houston, TX 77034		

Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Chief Industries Incorporated P.O. Box 2078 Grand Island, NB 68801		
Cliff Industries P.O. Box 1327 County Rd. 3 South Elkhart, IN 46514		*
C/O/A 9305 Michigan Ave. Detroit, MI 48210		*
Compatible Design Systems Company Santa Clara, CA 95052	Returned	
Component Houses, Inc. 3255-T Middlebelt Rd. Inkster, MI 48141		
Composite Structures Corporation Box 625 Louisburg, NC 27549		
Concrete Plank Company, Incorporated 2 Parete Avenue North Arlington, NJ 07032		
Creative Building, Incorporated 1101 East University Urbana, IL 61801		
Creative Fabrics Systems, Inc. 2501 South Raritan Englewood, CO 80110		*
Customhouse Buildings 7810 4th Place Downey, CA 90241	Returned	
Delco Steel Fabricators, Incorporated 11200 Roosevelt Blvd. Philadelphia, PA 19116		
Design Space International 2 Bala Plaza Bala Cynkiyd, PA 19004		*
Designed Facilities Leasing 16203-T E. Arrow Hwy. Irwindale, CA 91706		

Manufacturers Surveyed	Survey Returned-- No Forwarding Address	Manufacturers Responding
Diamond Domes 120 Ruth Road Bloomington, IL 61701		*
Dobler Enterprises 208 McConnel St., Suite D Laramie, WY 82070		*
Dueue Precast Concrete Products, Incorporated P.O. Box 1277 Oshkosh, WI 54901		
Dynafab 3129 W. Burbank Blvd. Burbank, CA 91505		*
Econonabilt Manufacturer Company, Inc. 609 Mast Road Manchester, NH 03102	Returned	
Econostrut Systems Incorporated 650 California Street San Francisco, CA 94108	Returned	
Endure-A-Lifetime 7500 N.W. 72 Ave., P.O. Box 660666 Miami, FL 33166		*
Endure Aluminum Building Products 2375 NW 75th Elizabeth, NJ 07207	Returned	
Expandable Shelters, Inc. 810 Houston, Suite 1214 Ft. Worth, TX 76102		*
Factory Built Homes, Incorporated 1313 Pinewood Drive Pittsburgh, PA 15243		
Fantaine Modular Structures Inc. Easthampton Road, Rt. 10 P.O. Box 538 Northhampton, MA 01060	Returned	
Fiberboard Paper Corporation 1710 59th Mertville San Francisco, CA 94501	Returned	
Foam Molding Corp. 8000-T University Des Moines, IA 53011		

Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Foam Plastics, Inc. 37-T 4th Street, SW Osseo, MN 55369		
Foamcar Incorporated P.O. Box 159 Benicia, CA 94501		
FULFAB, Incorporated 1525 Whipple Avenue SW Canton, OH 44710		
General Housing Industries, Inc. 301 South Allen Street State College, PA 16801	Returned	
Goodyear Aerospace Corporation Litchfield Park, AZ 85340		*
Guerdon Industries, Incorporated 21243 Ventura Woodland Hills, CA 91364		*
Housing Systems Company P.O. Drawer B Ventura, CA 93003	Returned	
Inmark International, Inc. 230 N. Michigan Ave. Chicago, IL 60601		*
Insulcrete International, Inc. 2000 SW 20th Street Ft. Lauderdale, FL 33315		*
Insta Buildings Incorporated 877 South Adams Road Birmingham, MI 48011	Returned	
International Shell Structures 180 Morris Avenue Mountain Lakes, NJ 07046	Returned	
International Shell Structures RD 1 Wharton, NJ 07885		
International Structures Corporation P.O. Box 69 Cornwells Heights, PA 19020		

Manufacturers Surveyed	Survey Returned-- No Forwarding Address	Manufacturers Responding
K-Span Building Systems RR 1 Huntingburg, IN 47542		*
Johns-Mansville 22 East 40th Street New York, NY 10016	Returned	
Jal-Donn Modular Building, Incorporated P.O. Box 45100 700 Bassett Road Westlake, OH 44145		
KAYKOR Division Continental Oil Company 129 Canel Road Fairless Hills, PA 19030	Returned	
Kelly Klosure Systems, Inc. P.O. Box 1058 Fremont, NB 68025		*
KWIK-Built, Inc. 3114 Benton St. Garland, TX 75042		*
L. Saunders, Inc. McLachlen Bank Bldg., Suite 810 666 11th St., NW Washington, DC 20001		*
Lawrence Packaging Supply Corp. 113-T N. 13th St. Newark, NJ 07107		
Line Structures Incorporated 695 Columbus Avenue Stratford, CT 06497	Returned	
Lockheed-Georgia Company 86 South Cobb Drive Marietta, GA 30063		*
M & S Structures P.O. Box 141, US 29-211 Gainesville, VA 22065	Returned	
Masonite Corporation 29 North Wacker Drive Chicago, IL 60606		

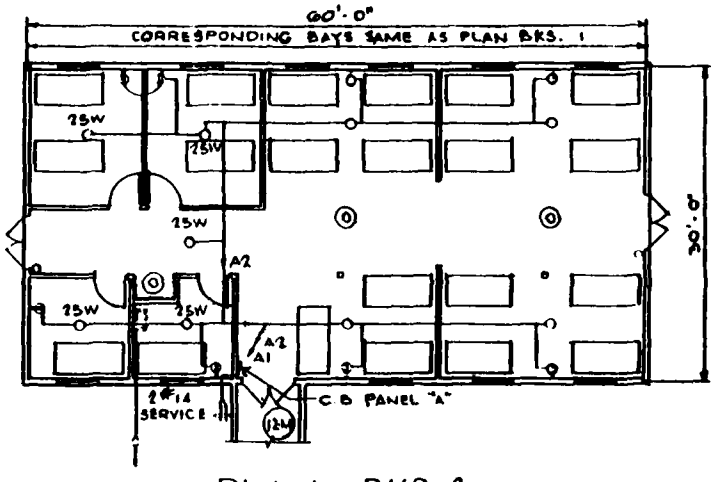
Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Mobile Facilities Incorporated 1800 W. 43rd Street Chicago, IL 60609	*Returned*	
Mobile Structures P.O. Box 1405 Elkhart, IN 46515		*
Modular Constructors Incorporated 309 New Boston Street Wabum, MA 01801		
Morgan Building Systems P.O. Box 222261 Dallas, TX 75222		*
Morgan Portable Building Company P.O. Box 7985 Kansas City, MO 64129		
Multiplex Structures Corporation Route 206 Mount Holly, NJ 08060		
National Building Systems P.O. Box 4368 Hialeah, FL 33014		*
Newtel Inc. P.O. Box 350839 Miami, FL 33135		
Niles Expanded Metals Corporation 105 North Pleasant Avenue P.O. Box 687 Niles, OH 44446		
Olympic Prefabricators P.O. Box 33686-T Seattle, WA 98133		*
Parkline, Inc. P.O. Box 65 Winfield, WV 25213		*
PASCOE Steel Corporation 1301 E. Lexington Ave. Pomona, CA 91766		*
Pacific Panels Incorporated P.O. Box 606 Elk Grove, CA 95624		

Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Panel LOC Systems Incorporated P.O. Box 644 Dover, NJ 07801	Returned	
Panelfab International Corporation 2000 NE 146th St. North Miami, FL 33181		
Potlatch Wood Products Group P.O. Box 3591 San Francisco, CA 94119		
Pease Company 900 Laurel Ave. Hamilton, OH 45023		*
Pepsico Building Systems 3031 La Jolla St. Anaheim, CA 92806		*
Port-A-Built Corporation 5500 North Valley Highway Denver, CO 80216		
Porta House, Inc. 717-27 Kevin Court P.O. Drawer 2226 Oakland, CA 94621		
Porta-Kamp P.O. Box 7064-T Houston, TX 77008		
Porta-King Building Systems 4133-T Shoreline Drive Earth City, MO 63045		
Porta-Space Inc. P.O. Box 515-T Cockeysville, MD 21030		
Precision-Built Corporation 4224 Airport Road Cincinnati, OH 45226		
H. H. Robertson Company 2 Gateway Center Pittsburgh, PA 15222		
Seaman Building Systems 2028 E. Whitfield Avenue Sarasota, FL 33580		*

Manufacturers Surveyed	Survey Returned– No Forwarding Address	Manufacturers Responding
Sectional Home Garage Works, Inc. 2344 Bailey Ave. Buffalo, NY 14211		
Sectional Housing Systems, Inc. 1772 Peynolds Avenue Santa Ana, CA 92705	Returned	
Sectional Structures Inc. 161 W. Schuyler Street Oswego, NJ 13126	Returned	
Sheffield Modulab 3630 San Fernando Road Glendale, CA 91204		
SOULE Buildings Soulé Steel Company P.O. Box 3510 Rincon Annex San Francisco, CA 94119		*
Span Systems, Inc. 180 Morris Ave. Mountain Lakes, NJ 07046		*
Spuntech Housing Corporation 1360 N. Main Street Ann Arbor, MI 48104	Returned	
Star Manufacturing Company Dept. NCD-11A 8600 S. Interstate 35 Oklahoma City, OK 73143		
Stran Division National Steel Prod. Co. Box 4D490 Houston, TX 77040		
Structural Plastics Corporation 325 Newark Rd. Hebron, OH 43025	Returned	
Structures, Inc. Box 639 Johnstown, PA 15907		
Task Force Homes, Incorporated 16737 Shore Drive NE Seattle, WA 98155		

Manufacturers Surveyed	Survey Returned – No Forwarding Address	Manufacturers Responding
Techbuilt 127 Mt. Auburn Street Cambridge, MA 02138	Returned	
Timber Engineering Company 1619 Massachusetts Avenue NW Washington, DC 20036	Returned	
Timberweld Mfg. 903 Clongh Ave. Columbus, MT 59019		
Transglobal Industries 1 Transglobal Square B7005 Long Beach, CA 90807		*
Uniblock Incorporated 6874 Hammond ES Dutton, MI 49016	Returned	
Unistrut Corporation 35005 Michigan Ave., W. Wayne, MI 48184		
United States Steel Homes Division of United States Steel P.O. Box 86 (USA 8680) Pittsburgh, PA 15230		
Unitized Systems Company, Incorporated P.O. Box 127 South Hill, VA 23970		
Universal Papertech Corporation Hatfield Industrial Park Hatfield, PA 19440	Returned	
Urban Systems Development Corporation Suite 900 Crystal Plaza 2001 Jefferson Davis Highway Arlington, VA 22202	Returned	
Wonder Bldg. Division Modular Technology Corp. Box 6 Plato Center, IL 60170		

APPENDIX B:
SAMPLE EVALUATION RESULTS



PLAN - BKS 2
MAX. CAPACITY (DOUBLE BUNKED) = 42 E.M.
OR WARD CAPACITY = 20 PATIENTS
SCALE NO. 1
FACIL NO. 517101 - INTERIOR ONLY
FACIL. NO. 517111 - STEEL FRAME W/INTERIOR
FACIL. NO. 517121 - WOOD FRAME W/INTERIOR
FACIL. NO. 530501 - MECHANICAL VENTILATION ONLY

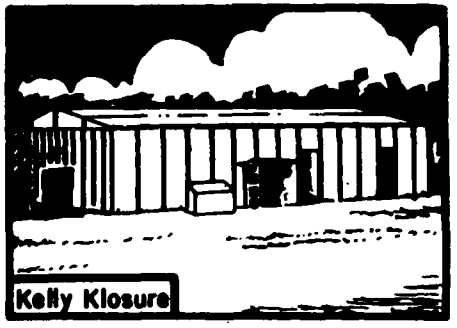
Figure B1. Existing barracks (facility number: 51-71).

AFCS LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

DIMEN. 30X60X8 FACILITY BARRACKS NUMBER 51-71

EVAL. NO.	MANUFACTURER	RECOMMENDATION
.696	PARKLINE INC.	★
.672	KELLY KLOSURE SYSTEMS	★
.665	ANCHOR INDUSTRIES	★
.657	MARINE CORPS KNOCKDOWN SHELTER	
.635	NATIONAL BUILDING SYSTEMS	
.576	ENDURE-A-LIFETIME	
.568	C/O/A	
.481	PEPSICO BUILDING SYSTEMS	
.472	DYNAFAB	
.345	K-SPAN BUILDING SYSTEMS	
.284	CLIFF INDUSTRIES	

ILLUSTRATION



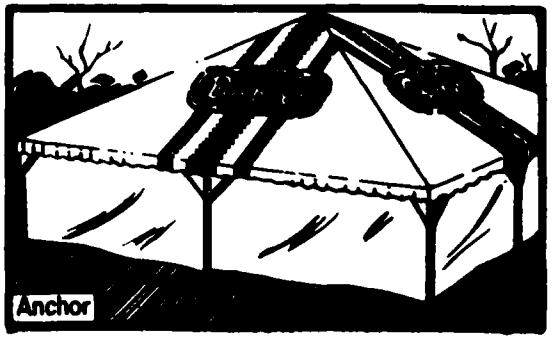


Figure B2. Evaluation summary for barracks.

AFCS LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

PARKLINE INC.
PO BOX 65, WINFIELD, W. VA. 25213
POC JERRY TENDALL, LOCKPORT, IL 815-838-1744 FTS 353-4011
32X32X8 32X60X8 32X72X8 32X80X8 32X92X8 32X100X8

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BUILDING USE-BARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	1.000	.1000
GROUP 2	CUBAGE	.10	1.000	.1000
GROUP 3	CONTAINER COMPATIBILITY	.10	.500	.0500
GROUP 4	SHELF LIFE	.05	1.000	.0500
GROUP 5	COST	.10	.889	.0889
GROUP 6	ASSEMBLY TIME	.12	.538	.0646
GROUP 7	ERECTION SIMPLICITY	.08	.111	.0089
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.500	.0300
GROUP 9	RELOCATABILITY	.08	.304	.0243
GROUP 10	COMPATABILITY WITH AFCS INT	.06	1.000	.0600
GROUP 11	LEAD TIME	.05	.785	.0393
GROUP 12	CLIMATE ADAPTABILITY	.05	.806	.0403
GROUP 13	QUANTITY FLEXIBILITY	.05	.785	.0393

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FINAL EVALUATION NUMBER .696

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Figure B3. Structure evaluation for Parkline Inc. barracks.

AFCS-LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

KELLY KLOSURE SYSTEMS
PO BOX 1058, FREMONT, NEBRASKA 68025
PHONE 800-228-7230 POC PAT BEERBOHM
28X60X8 28X72X8 28X92X8 28X100X8
•
•
BUILDING USE-RARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	1.000	.1000
GROUP 2	CURAGE	.10	1.000	.1000
GROUP 3	CONTAINER COMPATIBILITY	.10	.600	.0600
GROUP 4	SHELF LIFE	.05	1.000	.0500
GROUP 5	COST	.10	.778	.0778
GROUP 6	ASSEMBLY TIME	.12	.693	.0831
GROUP 7	ERECTION SIMPLICITY	.08	.667	.0533
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.600	.0360
GROUP 9	RELOCATABILITY	.08	.391	.0313
GROUP 10	COMPATABILITY WITH AFCS INT	.06	.500	.0300
GROUP 11	LEAD TIME	.05	.472	.0236
GROUP 12	CLIMATE ADAPTABILITY	.05	.074	.0037
GROUP 13	QUANTITY FLEXIBILITY	.05	.472	.0236

****

FINAL EVALUATION NUMBER .672

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Figure B4. Structure evaluation for Kelly Klosure Systems barracks.

AFCS-LIGHTWEIGHT/RELOCATABLE STRUCTURES STRUCTURE EVALUATION

ANCHOR INDUSTRIES
1100 MURCH DRIVE
EVANSVILLE, INDIANA 47733
812-867-2421
30 X 30 FIESTA TENT BARE FACILITY
P.O.C ERIC R. SOELTER
BUILDING USE-BARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	1.000	.1000
GROUP 2	CUBAGE	.10	1.000	.1000
GROUP 3	CONTAINER COMPATIBILITY	.10	1.000	.1000
GROUP 4	SHELF LIFE	.05	0.000	0.0000
GROUP 5	COST	.10	1.000	.1000
GROUP 6	ASSEMBLY TIME	.12	.769	.0923
GROUP 7	ERECTION SIMPLICITY	.08	0.000	0.0000
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.100	.0060
GROUP 9	RELOCATABILITY	.08	.304	.0243
GROUP 10	COMPATABILITY WITH AFCS INT	.06	1.000	.0600
GROUP 11	LEAD TIME	.05	.822	.0411
GROUP 12	CLIMATE ADAPTABILITY	.05	.012	.0006
GROUP 13	QUANTITY FLEXIBILITY	.05	.822	.0411

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FINAL EVALUATION NUMBER .665

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Figure B5. Structure evaluation for Anchor Industries barracks.

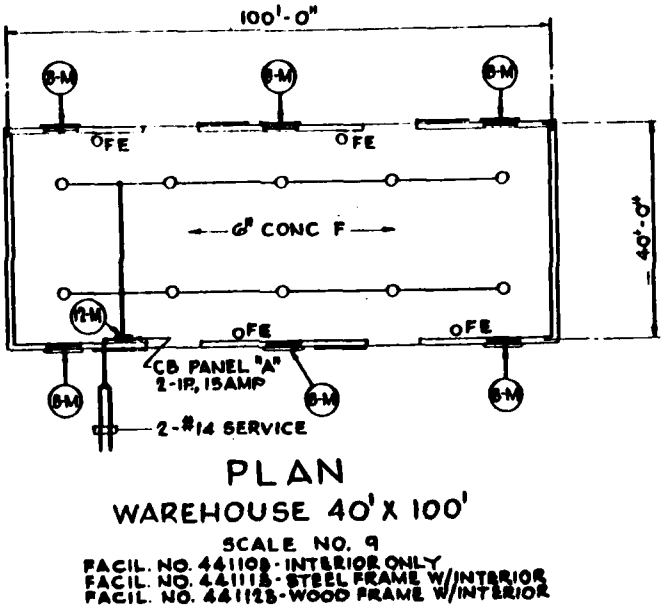

Figure B6. Existing warehouse (facility number: 44-11).

AECS_LIGHTWEIGHT/RELOCATABLE_STRUCTURES_____STRUCTURE_EVALUATION

DIMEN. 40X100X14 FACILITY WAREHOUSE NUMBER 44-11

EVAL. NO.	MANUFACTURER	RECOMMENDATION
.766	LOCKHEED-GEORGIA COMPANY	★
.607	KELLY KLOSURE SYSTEMS	★
.552	ATCO INDUSTRIES	★
.428	MORGAN BUILDING SYSTEMS	
.356	OLYMPIC PREFABRICATORS	
.254	K-SPAN BUILDING SYSTEMS	

ILLUSTRATION

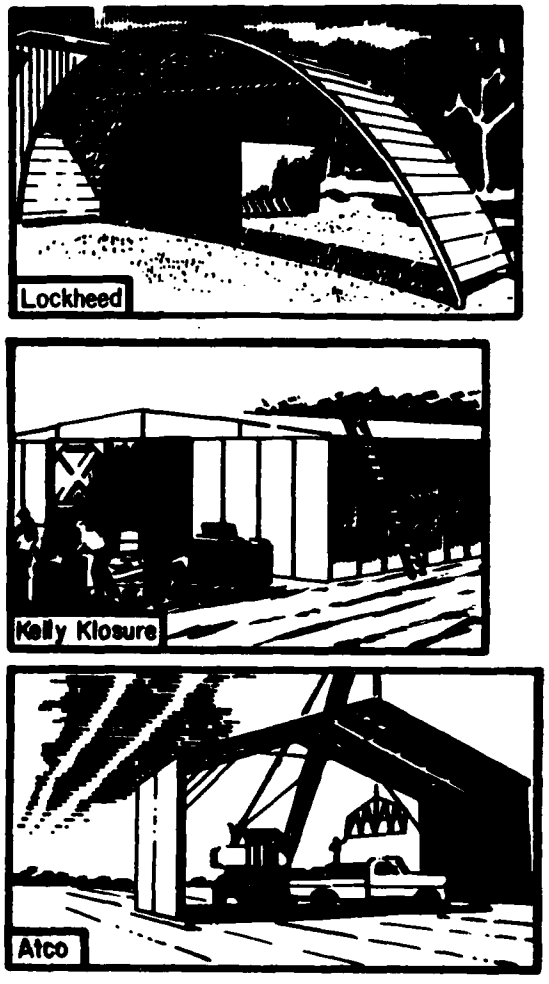

Figure B7. Evaluation summary for warehouse.

AECS LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

LOCKHEED-GEORGIA COMPANY
MARIETTA, GEORGIA
LOCARCH
37X48X12
.
.
BUILDING USE-RARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	1.000	.1000
GROUP 2	CUBAGE	.10	1.000	.1000
GROUP 3	CONTAINER COMPATIBILITY	.10	1.000	.1000
GROUP 4	SHELF LIFE	.05	1.000	.0500
GROUP 5	COST	.10	0.000	0.0000
GROUP 6	ASSEMBLY TIME	.12	1.000	.1200
GROUP 7	ERECTION SIMPLICITY	.08	1.000	.0800
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	1.000	.0600
GROUP 9	RELOCATABILITY	.08	1.000	.0800
GROUP 10	COMPATABILITY WITH AFCS INT	.06	1.000	.0600
GROUP 11	LEAD TIME	.05	0.000	0.0000
GROUP 12	CLIMATE ADAPTABILITY	.05	.318	.0159
GROUP 13	QUANTITY FLEXIBILITY	.05	0.000	0.0000

****

FINAL EVALUATION NUMBER .766

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Figure B8. Structure evaluation for Lockheed-Georgia Company warehouse.

AFCS LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

KELLY KLOSURE SYSTEMS
PO BOX 1058, FREMONT, NEBRASKA 68025
PHONE 800-228-7230 POC PAT HEERBOHM
44X40X12 44X40X16 44X40X20 44X60X8 44X60X12 44X60X16 44X60X20 44X80X8
44X80X12 44X100X8 44X100X12 44X100X16 44X120X16 44X120X20 44X140X12
44X140X1
BUILDING USE-RARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	.800	.0800
GROUP 2	CUBAGE	.10	.800	.0800
GROUP 3	CONTAINER COMPATIBILITY	.10	.286	.0286
GROUP 4	SHELF LIFE	.05	1.000	.0500
GROUP 5	COST	.10	.500	.0500
GROUP 6	ASSEMBLY TIME	.12	.571	.0685
GROUP 7	ERECTION SIMPLICITY	.08	.625	.0500
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.667	.0400
GROUP 9	RELOCATABILITY	.08	.818	.0655
GROUP 10	COMPATABILITY WITH AFCS INT	.06	1.000	.0600
GROUP 11	LEAD TIME	.05	.341	.0170
GROUP 12	CLIMATE ADAPTABILITY	.05	0.000	0.0000
GROUP 13	QUANTITY FLEXIBILITY	.05	.341	.0170

****

FINAL EVALUATION NUMBER .607

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Figure B9. Structure evaluation for Kelly Klosure Systems warehouse.

AFCS LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

ATCO INDUSTRIES
3600 YOSEMITE, SUITE 205
DENVER, COLORADO 80237
303-779-4273 FTS-234-3131
40 x 40 FOLDAWAY - EXPANDABLE
P.O.C PETER MC EWEN
BUILDING USE-RARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	.200	.0200
GROUP 2	CUBAGE	.10	.200	.0200
GROUP 3	CONTAINER COMPATIBILITY	.10	0.000	0.0000
GROUP 4	SHELF LIFE	.05	0.000	0.0000
GROUP 5	COST	.10	.750	.0750
GROUP 6	ASSEMBLY TIME	.12	.717	.0860
GROUP 7	ERECTION SIMPLICITY	.08	.875	.0700
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.333	.0200
GROUP 9	RELOCATABILITY	.08	.636	.0509
GROUP 10	COMPATABILITY WITH AFCS INT	.06	1.000	.0600
GROUP 11	LEAD TIME	.05	1.000	.0500
GROUP 12	CLIMATE ADAPTABILITY	.05	1.000	.0500
GROUP 13	QUANTITY FLEXIBILITY	.05	1.000	.0500

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FINAL EVALUATION NUMBER .552

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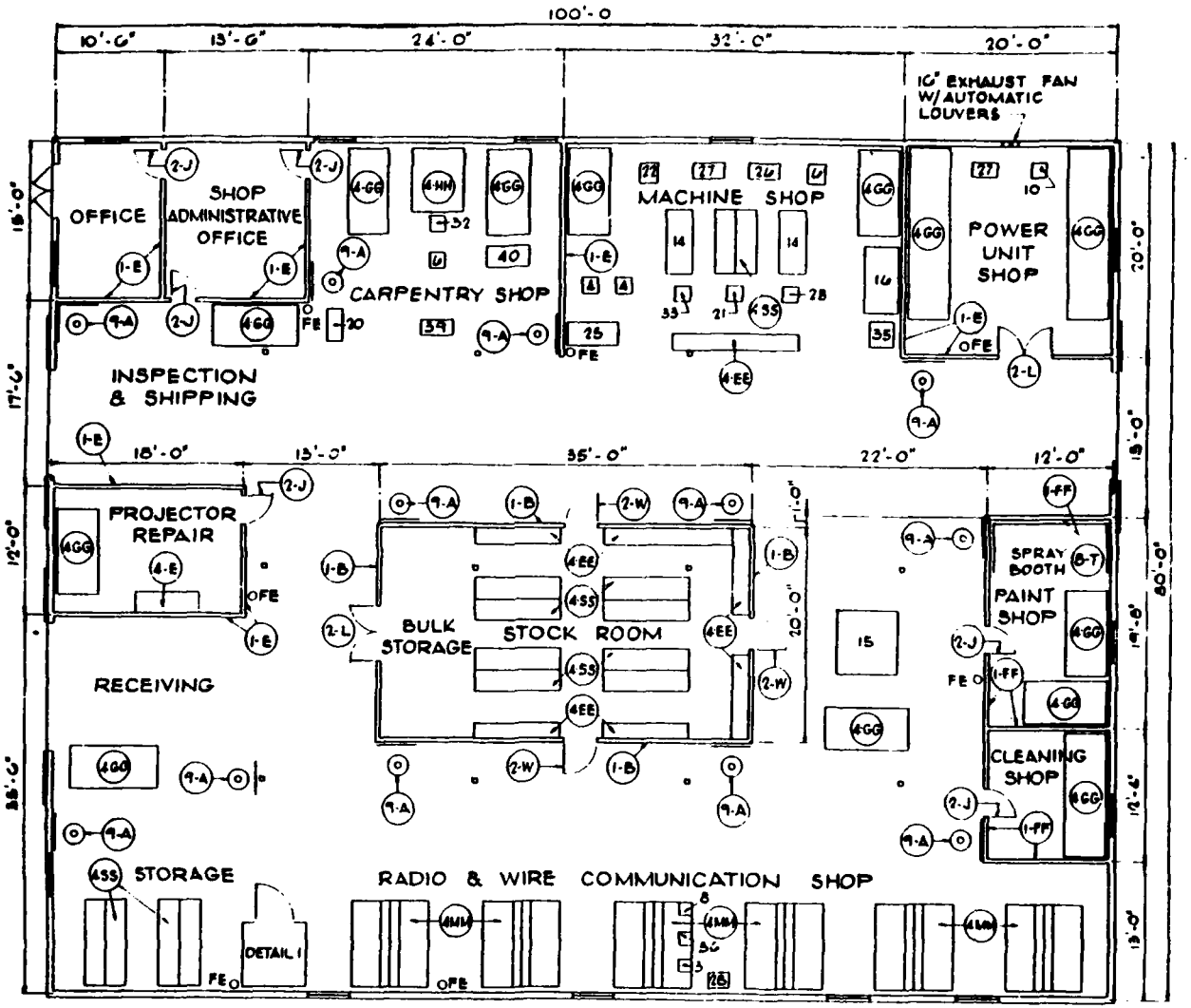
Figure B10. Structure evaluation for Atco Industries warehouse.



PLAN - SHOP, SIGNAL MAINTENANCE, 80' X 100'
SCALE NO 1
FACIL. NO. 132302 - INTERIOR ONLY
FACIL NO 132312 - STEEL FRAME W/INTERIOR

Figure B11. Existing signal maintenance building (facility number: 13-23).

AECS_LIGHTWEIGHT/RELOCATABLE_STRUCTURES_____STRUCTURE_EVALUATIONS

DIMEN. 80X100X12 FACILITY SIGNAL MAINT NUMBER 13-23

EVAL. NO.	MANUFACTURER	RECOMMENDATION
.669	BIRDAIR/CHEMFAB	★
.504	MORGAN BUILDING SYSTEMS	★
.447	LOCKHEED-GEORGIA COMPANY	★
.414	SEAMAN CORPORATION	

ILLUSTRATION

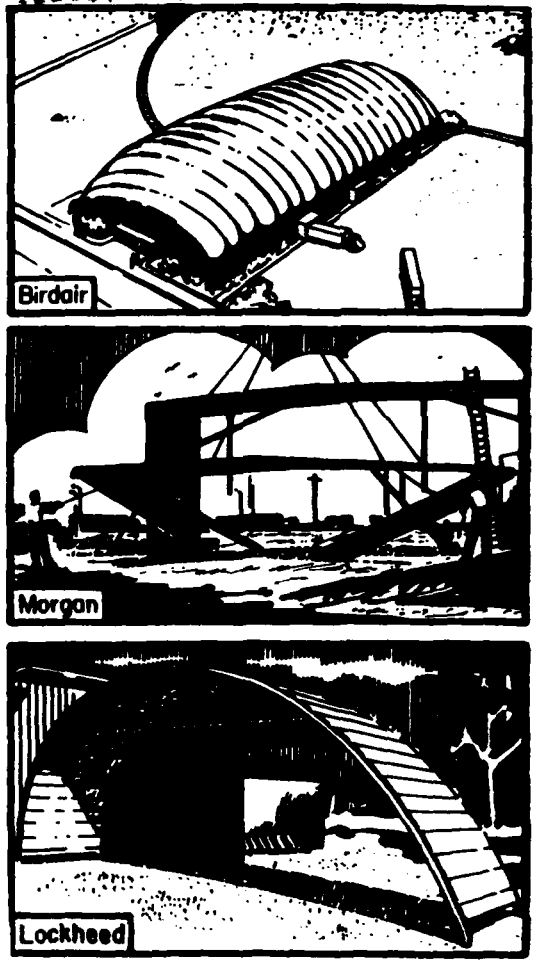


Figure B12. Evaluation summary for signal maintenance building.

AECS LIGHTWEIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

BIRDAIR/CHEMFAB
2015 WALDEN AVE
BUFFALO, NEW YORK 14225
716-684-9500 FTS-437-4411
80 X 100 AIR SHELTER EXP TO 80 X 250 BARE FACILITY
P.O.C. BUD SMITH
BUILDING USE-BARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	1.000	.1000
GROUP 2	CUBAGE	.10	1.000	.1000
GROUP 3	CONTAINER COMPATIBILITY	.10	1.000	.1000
GROUP 4	SHELF LIFE	.05	0.000	0.0000
GROUP 5	COST	.10	1.000	.1000
GROUP 6	ASSEMBLY TIME	.12	.599	.0719
GROUP 7	ERECTION SIMPLICITY	.08	0.000	0.0000
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	1.000	.0600
GROUP 9	RELOCATABILITY	.08	0.000	0.0000
GROUP 10	COMPATABILITY WITH AFCS INT	.06	0.000	0.0000
GROUP 11	LEAD TIME	.05	1.000	.0500
GROUP 12	CLIMATE ADAPTABILITY	.05	.741	.0370
GROUP 13	QUANTITY FLEXIBILITY	.05	1.000	.0500

****

FINAL EVALUATION NUMBER .669

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Figure B13. Structure evaluation for Birdair/Chemfab signal maintenance building.

AECS LIGHT-LIGHT/RELOCATABLE STRUCTURES — STRUCTURE EVALUATION

MORGAN BUILDING SYSTEMS
PO BOX 222261, DALLAS, TEXAS 75222
PHONE 214-840-1200 FTS 729-4011 POC LANNIE RATLIFF
80X102X20 80X120X14 80X139X14 80X185X20 80X203X14 80X222X14
80X240X14 80X240X12 80X298X20

BUILDING USE-RARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	0.000	0.0000
GROUP 2	CUBAGE	.10	0.000	0.0000
GROUP 3	CONTAINER COMPATIBILITY	.10	0.000	0.0000
GROUP 4	SHELF LIFE	.05	1.000	.0500
GROUP 5	COST	.10	.750	.0750
GROUP 6	ASSEMBLY TIME	.12	.599	.0719
GROUP 7	ERECTION SIMPLICITY	.08	1.000	.0800
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.667	.0400
GROUP 9	RELOCATABILITY	.08	.500	.0400
GROUP 10	COMPATABILITY WITH AECS INT	.06	1.000	.0600
GROUP 11	LEAD TIME	.05	.367	.0184
GROUP 12	CLIMATE ADAPTABILITY	.05	1.000	.0500
GROUP 13	QUANTITY FLEXIBILITY	.05	.367	.0184

****

FINAL EVALUATION NUMBER .504

****

Figure B14. Structure evaluation for Morgan Building Systems signal maintenance building.

AFCS LIGHTWEIGHT/RELOCATABLE STRUCTURES ---------- STRUCTURE EVALUATION

LOCKHEED-GEORGIA COMPANY
MARIETTA, GEORGIA LOCARCH
76XRRX25
.
.
.
BUILDING USE-BARE STRUCTURE

		WEIGHTING FACTOR	RAW SCORE	GROUP EVALUATION
GROUP 1	WEIGHT	.10	.250	.0250
GROUP 2	CUBAGE	.10	.250	.0250
GROUP 3	CONTAINER COMPATIBILITY	.10	0.000	0.0000
GROUP 4	SHELF LIFE	.05	1.000	.0500
GROUP 5	COST	.10	0.000	0.0000
GROUP 6	ASSEMBLY TIME	.12	1.000	.1200
GROUP 7	ERECTION SIMPLICITY	.08	.500	.0400
GROUP 8	SPECIAL ASSEMBLY REQUIREMENT	.06	.889	.0533
GROUP 9	RELOCATABILITY	.08	1.000	.0800
GROUP 10	COMPATABILITY WITH AFCS INT	.06	.333	.0200
GROUP 11	LEAD TIME	.05	0.000	0.0000
GROUP 12	CLIMATE ADAPTABILITY	.05	.667	.0333
GROUP 13	QUANTITY FLEXIBILITY	.05	0.000	0.0000

****

FINAL EVALUATION NUMBER .447

****

Figure B15. Structure evaluation for Lockheed-Georgia Company signal maintenance building.

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ATTN: DAEN-CW
ATTN: DAEN-CWE
ATTN: DAEN-CWM-R
ATTN: DAEN-CWO
ATTN: DAEN-CWP
ATTN: DAEN-MP
ATTN: DAEN-MPC
ATTN: DAEN-MPE
ATTN: DAEN-MPO
ATTN: DAEN-MPR-A
ATTN: DAEN-RD
ATTN: DAEN-RDC
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